

### **Abstract**

The invention concerns a method for separating air by cryogenic distillation in an installation comprising a medium pressure column (3), a low pressure column (4) and a mixing column (6). According to the method: air is compressed in a compressor (C01); is cooled in an exchange line (1); a first portion (2) of the air is fed to the vessel of the mixing column; a second portion of the air is fed to the medium pressure column where it separates; an oxygen-enriched liquid (19) and a nitrogen-enriched liquid (11) are fed from the medium pressure column to the low pressure column; an oxygen-rich liquid (26) is fed from the low pressure column to the top of the mixing column; at least one flow of liquid (27, 29) is drawn off from the medium or low pressure column; the second portion of air is boosted in a booster (8); this air is cooled in the exchange line; it is divided into a first fraction and second fraction; the first fraction of air is cooled in the exchange line; it is at least partially liquefied and then sent to the medium pressure column and/or the low pressure column; the second fraction of air is expanded in a Claude turbine (9) and is fed to the medium pressure column, and; an oxygen-rich flow (18) is drawn off from the mixing column and is heated in the exchange line.